



Case HF/5-22104/A/PCT

Declaration

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PCT NATIONAL STAGE APPLICATION OF      Group Art Unit: 1751

PETR KVITA ET AL

SERIAL NO.: 10/089,851

FILED: September 4, 2002

FOR: Fabric Softener Composition

DECLARATION UNDER RULE 132

I, Mario Dubini, a citizen of Switzerland residing in Niederdorf (Baselland),  
Switzerland hereby declare:

1. That I was awarded the Technical Laboratory Assistant in 1974 in Basel,  
Switzerland.
2. That I have been employed by Ciba Specialty Chemicals as a Technical  
Laboratory Assistant since April 1974.
3. That I presently hold the position of a Head of Application Laboratory Fabric  
Surface Modification in Grenzach, Germany.
5. That I consider myself an expert in the field of Textile dying, finishing, care,  
especially laundry processes.
6. That I prepared the test protocoll and performed the application tests of the compounds  
herein described in strict accordance with my statements in the Declaration.

The following test serves to demonstrate that the combination of polyorganosiloxane and polyethylene in a softener composition improves the anti-pilling property of the fabric.

The following three softener compositions have been used:

*Softener Composition A (Polydimethylsiloxane only, Prior Art)*

|           |   |
|-----------|---|
| 16.7 wt-% | Di(tallowoyloxyethyl)(2-hydroxyethyl)methyl ammonium methyl sulfate<br>(90 % solution = 15 wt-% softener) |
| 8.8 wt-%  | emulsified Polydimethylsiloxane (PDMS) with 350 cSt (22.7% solution = 2 wt-% PDMS)                        |
| 74.5 wt-% | water   |

*Softener Composition B (Polyethylene only, Prior Art)*

|           |   |
|-----------|---|
| 16.7 wt-% | Di(tallowoyloxyethyl)(2-hydroxyethyl)methyl ammonium methyl sulfate<br>(90 % solution = 15 wt-% softener) |
| 3 wt-%    | Velustrol P-40 (polyethylene)   |
| 80.3 wt-% | water   |

*Softener Composition C (PDMS and Polyethylene, Invention)*

|           |   |
|-----------|---|
| 16.7 wt-% | Di(tallowoyloxyethyl)(2-hydroxyethyl)methyl ammonium methyl sulfate<br>(90 % solution = 13.5 wt-% softener) |
| 8.8 wt-%  | emulsified PDMS with 350 cSt (22.7% solution = 2 wt-% PDMS)   |
| 3 wt-%    | Velustrol P-40 (polyethylene)   |
| 71.5 wt-% | water   |

The following washing and rinsing conditions are used:

ECE 77 standard laundry detergent (ISO 105-C06):

|        |  |
|--------|--|
| 8 %    | Linear sodium alkyl benzene sulfonate (mean length of alkane chain $C_{11,5}$ )              |
| 2.9 %  | Ethoxylated tallow alcohol (14 EO)   |
| 3.5 %  | Sodium soap, chain length ( $C_{12}$ - $C_{16}$ : 13 - 26 % $C_{18}$ - $C_{22}$ : 74 - 87 %) |
| 43.8 % | Sodium tripolyphosphate  |
| 7.5 %  | Sodium silicate ( $SiO_2/Na_2O = 3,3/1$ )  |
| 1.9 %  | Magnesium silicate   |
| 1.2 %  | Carboxymethylcellulose (CMC)   |
| 0.2 %  | EDTA, sodium salt  |
| 21.2 % | Sodium sulfate   |
| 9.8 %  | Water  |

Washing machine: AEG, Ökolavamat 73729

Washing process: short color cycle at 40°C  
33g ECE 77 standard laundry detergent / 1 kg wash load,  
Spin speed 400 rpm  
Total time: 53 minutes  
13.3g softener / 1 kg wash load

Wash load: 1 kg fabric (inclusive Polyester-ballast material)

Drying: Drying on the line at room temperature

After each washing and rinse process a washing cycle without any textile (to clean the drum and the softener dispenser of the machine) has been made:

AEG, Ökolavamat 73729 short cycle at 95°C  
40g ECE 77 standard laundry detergent

**TEST: Determination of fabric propensity to pilling (ISO 12945-2)**

*Used textile:*

Cotton Tricot (without finishing; 195 gm<sup>-2</sup>; 25cm x 50cm)

*Procedure for measuring the propensity to pilling:*

The method is done according to the standardized test method ISO 12945-2 (with a Martinsdale abrasion testing machine):

A test specimen of the fabric is passed over a friction surface comprising the same fabric at a defined force (load weight 415 g) in the form of a Lissajous figure, with the test specimen able to rotate easily around an axis through its centre, perpendicular to the plane of the test specimen. Pilling is assessed visually after defined stages (250 number of rubs, 500 number of rubs and 1000 number of rubs).

The ratings range from 1 (severe pilling) up to 5 (no change).

The results of the test are summarized in the following table 1.

Table 1

|                     | Softener A | Softener B | <b>Softener C</b> |
|---------------------|------------|------------|-------------------|
| 250 number of rubs  | 3          | 3.2        | <b>3.5</b>        |
| 500 number of rubs  | 2.8        | 2.8        | <b>3.2</b>        |
| 1000 number of rubs | 2.5        | 3.1        | <b>3.3</b>        |

The fabric treated with the inventive formulation shows a reduced propensity to pilling in comparison to the softener of the prior art.

This behavior could not be expected by a person having ordinary skill in the art.

I, Mario Dubini, finally declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 101 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 6<sup>th</sup>. day of April 2004

A handwritten signature in dark ink, appearing to read 'Mario Dubini', with a long horizontal flourish extending to the right.

Mario Dubini